tissue supposed to have a special defensive function against them, and already in a state of reaction to them, the results might show some diminution of virulence or some increase in immunity in the new host." Guinea-pigs were used in the experiments. The first series of animals were inoculated subcutaneously with 300 bacilli and a month later the inguinal lymph nodes were excised and transplanted subcutaneously into a new series. These animals in turn developed tuberculous lymphadenitis and the inguinal lymph nodes were inoculated into new animals, and so on with succeeding series. The wound of implantation heals in about two weeks, at which time the inoculated tissue is surrounded by a granulation tissue developing from the host. Caseation continues within the node and may ulcerate on the skin surface. From the third to the fifth week the inguinal glands of the host become involved and the animal not uncommonly is overwhelmed with a tuberculous infection as if inoculated by free bacilli. The authors have not been able to determine any increased resistance on the part of the inoculated animals, nor were they able to demonstrate any modification in the virulence of the bacilli. Tuberculin tests are negative until true infection of the tissue of the host has taken place. The implantation of a second tuberculous nodule after the first has been established leads to what appears to be a tuberculin reaction. The difficulty in all these experiments lay in the progressive general infection. In another series of experiments the authors attempted to obviate this difficulty by covering the transplant with a coating of celloidin. The difficulties in these experiments arose from the repeated sloughing of the inoculated mass. In one instance the nodule was retained ten months. This animal showed no evidence of disease, and repeated tuberculin tests were negative. They were able to demonstrate diffusion from within the celloidin coating by transplanting a large tuberculous node beneath the skin of a tuberculous guinea-pig. A reaction developed in the vicinity of this node similar to that from tuberculin.

The Etiology and Pathology of Rocky Mountain Spotted Fever.—Wolbach (*Jour. Med. Res.*, 1918, xxxvii, 499) has added a third report to his previous preliminary contributions. He had previously described the lesions in guina-pigs and monkeys. These lesions were essentially those of the vascular system. A microörganism was observed as a minute rod, surrounded by a clear zone and occurring in the endothelial and smooth muscle cells. Similar parasites were found in ticks (Dermacentor venustus). From his further studies the author is convinced that the parasite does not belong to the protozoa nor has it the characters of ordinary bacteria. He suggests that it probably represents a new form of microörganism. The author has had an opportunity of carefully studying 3 human cases of Rocky Mountain fever. In 2 of them there was a history of tick bite a few days before the onset of illness. Autopsy examinations were made in 2 cases and in the third skin from various parts of the body was obtained. The important findings were the presence of extensive vascular lesions in the skin and subcutaneous tissues of all parts of the body. The vessels in the deep cornium and fat are often thrombosed. The earliest lesion is a collection of endothelial cells over a swollen portion of the intima. The elastic fibers are fragmented. The minute parasite is found in these endothelial cells and in the muscle fibers of the media. Similar lesions are present in the veins. It is noteworthy that the bloodvessels of internal organs do not show this reaction.

HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF
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Scarlet Fever during 1915 in Philadelphia.—OSTHEIMER (*Am. Jour. Pub. Health,* October, 1916, vol. vi to x) states that during 1915, 1072 cases of scarlet fever were reported in Philadelphia, exactly 100 more than half the number reported in 1914. There is a morbidity rate of 63.7 per 100,000 as compared with 117 in 1914 and 208 in 1913. The lowest number of cases was reported during August, 29 cases; the highest number during December, 147 cases. As to the sex of the 1072 cases, 529 were males, of which 513 were boys and 543 females, of which 501 were girls. These figures are the lowest since 1900, as is also the death-rate from scarlet fever during 1915, which is only 26 in the entire city; 74.6 per cent. of the cases were reported to the Bureau of Health within three days from their onset. Girard College furnished the only institutional epidemic of 31 mild cases, and there were also two small school epidemics of 12 and 10 cases each. No cases were traced to milk infection. Statistics of the number of cases in the different wards and districts were made and it was found that the density of population had no relation to the number of cases. When the primary case was treated at home, 117 secondary cases occurred later than twenty-four hours, but within one month after the first case; but only 31 secondary cases occurred when the primary case was removed to the hospital for treatment. During the year of 1915, 625 cases, or 58.3 per cent., were removed to the Philadelphia Hospital for Contagious Diseases, while 447 cases, or 41.7 per cent., were treated at home. The hospital death rate during the year was 21 deaths, or 3.3 per cent., and the death rate among those treated at home was 5 deaths, or 1.1 per cent.

The Germicidal Effect of Gastric Juice.—GREGERSEN (*Zentralbl. Bakt.,* 1916, Part I, p. 353) found that the bactericidal effect depends wholly upon the presence of free hydrochloric acid. The experiments were carried on with Staphylococcus pyogenes aureus. The bacterial emulsion was incubated with 4 c.c. of gastric juice at body temperature.